PROGRESS TEST 1

1) Sodium:
- is an alkaline metal
- is a halogen
- has no lone pairs
- has 1 lone electron shared in covalent bonds

2) Nitrogen:
- belongs to the 3rd group
- has a low electronegativity
- has 3 lone electrons
- can make 3 coordination bonds

3) A certain atom A is bound to Cl: how strong is its ionic nature?
- It is always not ionic
- it is stronger whenever A's electronegativity is strong
- it is stronger whenever A's electronegativity is small
- it is independent of A's electronegativity

4) Two equal volume cylinders are filled up with the same mass of two different ideal gases at the same T: what happens?
- P is higher for the gas with higher FW
- the ratio P_{gas1}/P_{gas2} cannot be calculated, it must be measured
- the two gases have the same P
- the ratio P_{gas1}/P_{gas2} depends on the ratio between their FW

5) The mole fraction of a gaseous mixture:
- is equal to %v, up to a factor of 100
- is equal to %w, up to a factor of 100
- is the ratio between the mass in g of the gas and the total mass of the mixture
- is not dependent on the partial pressure

6) 0.93 g of a gas fill up a volume of 250ml at 700mmHg and 27°C.
Calculate the FW

7) A mixture of 50g of O_2 and 50g of CO is filling in a box at 600mmHg. Which is the partial pressure of each gas in atm?

8) A solution of Nitric acid has a concentration of 0.2M. Calculate the molar concentration of the solution obtained after diluting 100ml of this first solution with water up to a final volume of 500ml.

9) 100ml of HCl 0.5N are mixed with 150ml of HCl 0.1N. Calculate the normality of the solution.

10) Calculate the molar concentration of a solution 3 molal of ammonia, whose density is 0.98g/ml.